

# **Western North American Defoliator Working Group Meeting**

## **October 22, 2015**

### **Ogden, Utah**

#### **Attendees:**

There were 19 attendees in Ogden, and five attendees who participated via LiveMeeting. Forest Service attendees came from Regions 1, 2, 4, 5, and 6, the Pacific Southwest and the Southern Research Stations, and the Washington DC office. State forestry representatives from Alaska, Idaho, New Mexico, Oregon, Utah and Washington also attended. A list of attendees is attached.

#### **Review of Action Items**

We reviewed the 2014 Action Items from notes by Bill Schaupp, Bob Cain & Joel Egan. Bullet points were addressed and new action items identified as follows:

#### **OLD ACTION ITEMS FROM 2014 MEETING**

1. Western Spruce Budworm
  - Connie Mehmel reported that WSBW plots on the Okanogan-Wenatchee are still being trapped, but not remeasured. Five plots on the Colville are still being measured.
  - Iral passed out a final manuscript of Niwa and Overhulser's: *Monitoring Western Spruce Budworm with Pheromone-Baited Sticky Traps to Predict Subsequent Defoliation*, PNW-RN-571
  - Darren Blackford and others compiled a WSBW and thinning projects literature review. Darren sent this to Kathy Sheehan. Darren will send it out to the group.
2. Suppression Projects
  - Iral sent a letter to the Directors regarding training needs.
3. Douglas-fir Tussock Moth
  - R6 is evaluating the relationship between EWS trap captures and ADS-detected outbreaks at a broad scale. The EWS is not designed to necessarily provide 'where' an outbreak will occur just 'when' one is likely in an area. So, you need broad coverage for it to be most effective. Other Regions/States have similar concerns about the usefulness of the data and maintaining the trapping with budget/staff reductions. Robbie will address R6 EWS data in his presentation and contact FHTET regarding long-term DFTM trapping data storage and management needs.
  - Lee Pederson is working on DFTM revised FIDL. Lee says it is close to completion.
  - Tom Coleman's paper on DFTM in California is available now on Google Scholar.
  - Beth Willhite's four-year gray literature cataloguing contract is ongoing. She will continue to send out periodic updates.

## NEW ACTION ITEMS FROM 2014 MEETING

### 4. Western Spruce Budworm

- The Payette NF has plots measured in the 80s and early 90s. R6 would like to remeasure & post on the defoliator website. Tom Eckberg has relocated them. Tom will assess these plots with Laura Lowrey, and remeasure other plots on the Boise NF where plot data is available.
  - i. *NOTE FROM TOM E:* I talked to Laura Lowrey, we will attempt to evaluate plots near McCall, but plot data and notes were lost in a prior move. I have plot location and numbered summary report only. We will also try to remeasure plots further south on the Boise NF where plot info does exist.
- Beth Willhite will evaluate WSBW long term impact plots by Region.
- Darren Blackford will send out his literature review on thinning and WSBW.

### 5. Climate Change

- What is FHP level of involvement in climate change? Brytten Steed will organize information on vulnerability assessments in the West.

### 6. WNADWG Website

- Currently hosted by R6 and includes meeting information, notes, and reports back to 1988. <http://www.fs.usda.gov/goto/r6/fhp/wnadwg>

### 7. Suppression Projects

- Maintain expertise for conducting aerial & ground-based spray projects to control defoliators. Iral Ragenovich will coordinate with Harold Thistle to offer training. She will need a committee to assist this fall/winter; one person per FS region and one from each state. Volunteers so far are Rebecca Powell (R2), Darren Blackford (R4), Gina Davis (Idaho). Still need volunteers from FS regions 1, 3, 5 and 10. (NOTE: Amanda Grady will be contacted.)
- Suppression project training needs identified include contracts, scoping, calibration, application methods, Technical Flight Restrictions and interactions with FAA.
- Have a presentation at the 2016 meeting by an expert such as Dick Reardon or Amy Hill. If we do the training, one of the attendees can present. Iral will coordinate.

## NEW ACTION ITEMS FROM 2015 MEETING

8. Synergy may be our only source of WSBW and DFTM lures in the future. Quality control has been a problem. Lures vary in size. How does this affect lure performance? Problems with Synergy MCH bubble caps were also discussed. Connie Mehmel and Tom Coleman will contact Dave Wakarchuk regarding product performance.
9. We need an updated DFTM plot map. Robbie Flowers will work with Zack Heath.

10. Develop a short (1-page) briefing paper describing major themes and key points of the NADWG meeting. Bob Rabaglia will present these items at the November 17 Directors' Meeting. Connie Mehmel will send this out.

### **Gypsy Moth in the West**

Gypsy moth managers' meeting in Illinois discusses spray technology, insecticides. Bob Rabaglia will send information to our group. Someone may want to attend.

R6 has a gypsy moth EIS in place. Shawna Bautista is involved.

ICS training for logistics should be part of training people involved in spray projects. Robbie will send out information. APHIS does this.

Tom Eckberg reported on gypsy moth in Idaho. The last spray project was in 2005 for Asian gypsy moth. In 2015 three European gypsy moths were trapped south of Kellogg. They will be delimiting the infestation. North Idaho is done, south Idaho not yet collected.

Lee Pederson reported no GM in FS Region 1. He traps FS campgrounds.

Rebecca Powell reported no GM in FS Region 2.

Darren Blackford reported traps are still being collected in FS Region 4.

Jason Moan reported on GM in Alaska. AGM was intercepted offshore around Juneau in 2014. EGM was last detected in 2006.

Robbie Flowers reported on GM in Region 6. In 2015, there were 14 gypsy moths captured at 11 sites in Oregon, 12 EGM and 2 AGM. In Washington State, 42 gypsy moths were detected at 17 sites, 32 EGM and 10 AGM. All EGM detections represent new sites except 22 moths captured in Seattle. This is the 4<sup>th</sup> consecutive year of finds there and an eradication project was proposed. Delimitation trapping is planned at all other EGM sites. ODA and WSDA have developed action plans for eradication projects and delimitation trapping at all AGM sites. These include 5 treatment areas: Portland/Vancouver, Tacoma, Kent, Nisqually, and Gig Harbor. Eradication projects for AGM would involve 3 aerial sprays of *Btk* over a 0.5 mile radius from detection sites and may include areas between sites in one treatment area. Delimitation surveys planned at 2 trapping intensities. Draft recommendations from the AGM Science Technical Working Group (STWG) have been completed for the 5 proposed projects and there is broad agreement with State action plans. The SPHDs for OR and WA are working to finalize AGM action plans and connect agency PIOs to unite messaging. The Invasive Species Councils for OR and WA are hosting all public information on their websites and assisting with social media.

### **Douglas-fir Tussock Moth**

Iral Ragenovich presented status of DFTM lures. Gary Daterman set the original standards. We have ordered lures from Contech in the past. Lures contain a minute amount of pheromone. When Scott Corp. took over Contech, it changed a lot of personnel. Iral sent lures from Scott to Rick Kelsey for testing. Rick couldn't detect any pheromone with gas chromatography because of the minute amount involved. Lures

were recently tested in several states, with random comparison of old Contech lures, new Contech (Scott) lures, and Synergy lures. They were put out in areas where DFTM are typically captured. Results are not in yet.

Glenn Kohler has data on 75 traps. Scott lures are low (ave 1.5), Synergy high (ave 3.5). Mike Johnson had similar results.

We love the color of the Synergy lure, but don't like the variable sizes.

Rebecca Powell reported a continuing DFTM outbreak in FS Region 2. Trap catch is low because of high numbers of females. No spray is planned on federal land. Some private landowners want to spray. Rebecca considers this a waste; the outbreak is about to collapse.

Central Washington DFTM captures are increasing. There may be an outbreak building; possibly 2017.

Robbie Flowers presented trends in R6. DFTM information and EWS data is available on R6 website for 1979 to 2012.

<http://www.fs.usda.gov/goto/r6/fhp/dftm>

We discussed DFTM virus spray projects on the Okanogan-Wenatchee National Forest in 2000 and 2010. Population virus assays were completed prior to both projects. Although virus level was very low in 2009, 2010 population collapsed from virus in sprayed and unsprayed areas. Some strains of virus are more potent than others. Variable pathogenicity was demonstrated in a study by Otvos. Do Glenn Kohler and Steve Cook have data on virus assays?

What is the future of DFTM trapping? Turnover on districts; we have lost many of the people who used to do trapping. Service centers can do it, but it is a significant investment of time. What is the value of the long term data set? Very valuable in Idaho and central Washington. It's important to be able to give good advice. Should we use contractors to set out traps?

Robbie F. talked about the DFTM database. There have been problems with the website, but the Early Warning System data is now available. Database download requires Access 2010 and some configuration for FS users. He reviewed how to view and export the data – options for graphs and tables. You can also download as an Excel spreadsheet. He is the only one currently able to update the database – so additional data should be sent to him for inclusion.

<http://www.fs.usda.gov/goto/r6/fhp/dftm-database>

We haven't produced DFTM trapping maps in a few years. Robbie will work with Zack Heath on this (Action Item).

Do we want to keep this database available, or just the spreadsheet? Is this a format the group wants? There are many years of trapping data missing from the database from several Regions/States, so Robbie will be contacting those reps. regarding data. Trap distribution is fine scale. Protocol is one trap per 3,000 acres. We might be able to trap with high dose baits and get the same predictive ability with fewer traps, but it

would make long-term analyses difficult. Current state of DFTM monitoring programs will be discussed in a workshop at the North American Forest Insect Work Conference.

### **Western Spruce Budworm**

Tom Zegler reported that New Mexico has had chronic WSBW defoliation for about 10 years, about 300,000 acres per year. Aerial Survey is only mapping heavy defoliation.

Darren reported that Region 4 is using Carbaryl in campgrounds; ground application. Liz Hebertson is coordinator. Don't know what concentration they should be using.

Rebecca Powell reported that Region 2 is only mapping severe defoliation. There are no spray projects.

Glenn Kohler reported that WSBW is decreasing in Region 6, except in the northeast. Pine butterfly and WSBW collapsed in Oregon at the same time. He assisted with one private land BtK spray project in central Washington east of Snoqualmie Pass. He advised them to spray within 48 hours of the time they saw the first 6<sup>th</sup> instar. He used Wickman's degree days publication.

Connie Mehmel reported that the Colville National Forest sprayed BtK on one of their seed orchards. She helped with the population monitoring, District personnel monitored the timing.

Iral mentioned changes in budbreak timing & WSBW larval synchrony. Can affect young larval survival.

Aquila Flower did a LiveMeeting presentation of her work on inter-disturbance synergy; WSBW and fire. Questions are relationship between drought & WSBW, and relationship between WSBW and fire. Study area is NE Oregon to western Montana. Fires are limited by fuel moisture, not by fuel availability. WSBW outbreaks tend to occur near the ends of droughts, not extended droughts. WSBW outbreaks and fires occur independently. Fuel does not limit fire. Climate & land use affect fuel availability. Study does not address fire severity. This is addressed by modeling.

Glenn Kohler reported on his comparison of Synergy & Contech lures. Connie Mehmel also did some comparisons. There was no statistical difference.

Lee Pederson reported substantial WSBW outbreak in Montana, expected to increase. Looks like DFTM defoliation. Not much activity in northern Idaho. Lee was there doing balsam woolly adelgid work.

### **Other Defoliators**

- Sawflies

Chris Looney reported on sawfly identification and surveys. Lots of green alder sawfly in Washington. Sawfly traps have been put out in Oregon, Idaho, Washington and California. Over 3,500 specimens examined at 6 universities. He identified 22 species in Washington that were not recorded before. New detections will go into a manuscript. Pocket identification guide has been produced. See PNW sawflies website: <http://pnwsawflies.biol.wvu.edu/accounts/login/>

- Balsam Woolly Adelgid

Gina Davis, Laura Lowrey and Lee Pederson were part of a conference call with Canada. Looking for funding for research & management. Should this be an emphasis item? Should biocontrol be revisited?

Robbie talked about predator introductions in R6 in the 1950s. Does it make sense to do additional introductions in Washington & Oregon? New introductions in Idaho and Montana may make more sense.

Iral said that historically BWA has lots of initial mortality, then less susceptible individuals survive & reproduce. This happened with Fraser fir in the Appalachians.

Would climate change affect BWA? What about diversity in high elevation forests? BWA populations wax & wane. A white paper was distributed (Editors Laura Lowrey & Gina Davis): *Identification of information gaps with research & management recommendations for balsam woolly adelgid & subalpine fir in Idaho, Montana, Wyoming & eastern Oregon & Washington.*

There has been no research on resistance. The host population might have tolerance. Older trees have bark crevices for insects to shelter. Fraser fir in the 1960s had no gouting, just bole infections. Infested trees are less likely to reproduce.

Steve Cook is working on BWA. Rob Progar has a post-doc assessing BWA and predator populations. Richard Sniezko is interested in gene conservation. Northern Idaho and Montana are the areas of concern. We need better ways to monitor predators. Russ Mitchell found lots of predators in the Cascades. BWA can kill trees at low population levels. Predators may not be able to prevent initial wave of mortality, but may be able to control future populations.

- Pine Butterfly

It has been 4-years since the pine butterfly outbreak collapsed in the Blue Mountains. Robbie and Dave Shaw will present on 5-year cumulative mortality at the next meeting and dendrochronology will be done 10 years post-collapse.

- Other Defoliators

Jason Moan reported spruce aphid outbreak in SE Alaska in Sitka spruce, west side of the Kenai. This is far outside the known range. He is working with coop extension.

Tom Zegler reported a spruce aphid outbreak on the Apache-Sitgreaves. Planning to do something with drones. Please contact Amanda Grady for finer details, if wanted.

Pandora moth is affecting piñon pine on the north rim of the Grand Canyon. Please contact Amanda Grady for finer details, if wanted.

Two species of leaf beetle are defoliating saltcedar. This is controversial because an endangered flycatcher is using saltcedar for nesting.

Tom Coleman reported heavy black pineleaf scale in Jeffrey pine in California. Bigger problem in communities than on the national forest. An outbreak of piñon needle scale has been going on for 3-4 years in southern CA.

Don Grosman reported on oak gall wasp. Stem galls reduce water movement to leaves. Imidicloprid is helpful.

### **Next Meeting**

Missoula was suggested as a location for the 2016 meeting. Darren will contact Brytten. The proposal was to have Brytten do local arrangements. Darren will moderate the bark beetle meeting, Glenn will moderate the defoliator meeting.

Respectfully Submitted,

Connie Mehmel

Entomologist

USFS Forest Health Protection, Region 6

Wenatchee Insect and Disease Service Center

# Western North American Defoliator Working Group Meeting Attendees, 2015

First Name	Last Name	Agency	Email	Comments
Darren	Blackford	USFS-FHP-R4-Ogden UT	<a href="mailto:dblackford@fs.fed.us">dblackford@fs.fed.us</a>	
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Bob	Cain	USFS-FHP-R2-Golden CO	<a href="mailto:rjcain@fs.fed.us">rjcain@fs.fed.us</a>	LiveMeeting
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